

Miscellaneous notes on the systematics of and synonymy in Entiminae (Coleoptera, Curculionidae)

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Abstract

This work addresses a collection of miscellaneous notes intended to resolve several issues in synonymy and taxonomy of the Entiminae tribes Byrsopagini, Cyphicerini, Mesostyloidini, Phyllobiini and Polydrusini. New synonyms are herein proposed: *Peronaspis* Suvorov, 1915 = *Viridistylus* Colonnelli & Paladini, 2019, **syn. nov.**; *Peronaspis claviger* (Faust, 1894) = *Viridistylus robustus* Colonnelli & Paladini, 2019, **syn. nov.**; *Titinia tenuis* (Germar, 1848) = *Mylocerus bacchus* Voss, 1949, **syn. nov.**; *Brachymerinthus* Faust, 1886 = *Parakasakhstania* Magnano, 2009, **syn. nov.**; *Brachyxystus subsignatus subsignatus* Faust, 1897 = *Polydrusus setifrons kashmirensis* Voss, 1959, **syn. nov.**; *Polydrusus rufulus* Hochhuth, 1847 = *Polydrusus reitteri* Kirsch, 1878, reestablished synonymy, = *Polydrusus freyi* Zumpt, 1933, **syn. nov.**; *Polydrusus viridimaculatus* Pic, 1919, **stat. nov.** = *Polydrusus scapularis* Pesarini, 1975, **syn. nov.** New taxonomic status is proposed for *Polydrusus viridimaculatus* Pic, 1919, **stat. nov.**, which is promoted to species from the subspecies of *Polydrusus picus* (Fabricius, 1792).

New combinations. *Brachymerinthus densesquamosus* (Magnano, 2009), **comb. nov.** from *Parakasakhstania*; *Phyllobius* (*Phyllobius*) *constellatus* (Voss, 1959), **comb. nov.** and *Brachyxystus subsignatus praevious* (Voss, 1959), **comb. nov.** from *Polydrusus* Germar, 1817. New tribal placements: *Sepiomus* Aurivillius, 1891 and *Cylindromus* Aurivillius, 1891 are transferred from Byrsopagini back to Cyphicerini (subtribe Cyphicerina); *Brachymerinthus* Faust, 1886, is transferred from Phyllobiini to Mesostyloidini, and *Brachyxystus* Faust, 1897, from Phyllobiini to Polydrusini. The lectotype of *Polydrusus picus* var. *viridimaculatus* Pic, 1919 is designated. The type locality of *Mylocerus bacchus* is Bacchus Marsh, a town near Melbourne in Victoria State, Australia, not Lake Victoria in Africa. *Polydrusus rufulus* Hochhuth, 1847 is recorded in Iran for the first time.

Key Words

Byrsopagini, Cyphicerini, Mesostyloidini, Phyllobiini, Polydrusini, taxonomy, weevils

Introduction

The megadiverse subfamily Entiminae comprises approximately 14,600 species from 1,353 genera and 53 tribes (Yunakov et al. 2024). The taxonomy of this subfamily remains problematic, partly due to the artificial composition of some tribes, such as Byrsopagini

and Phyllobiini, which conventionally include unrelated taxa, as well as genera *incertae sedis* since Wilhelm Junk's Coleopterorum Catalogus (Lona 1938) and the more recent world catalogue of weevil genera (Alonso-Zarazaga and Lyal 1999).

The tribe Cyphicerini consists of around 1,100 species from 135 genera, distributed mainly in the

Indo-Malayan, Palearctic, Ethiopian and Australian regions. The major taxonomic reassessment at the genus level was conducted by Marshall (1944) based on the chaetotaxy of mandibles and prementum. In his work, Sir G.A.K. Marshall removed two typical Indochinese cyphicerine genera, *Sepiomus* Aurivillius, 1891 and *Cylindromus* Aurivillius, 1891, from the tribe and placed them in Leptopiinae (now tribe Byrsopagini within Entiminae; Alonso-Zarazaga et al. 2017). A close examination of the internal and external morphology of these genera revealed that they should be restored in the tribe Cyphicerini. Similarly, the taxonomy of *Myllocerus* Schoenherr, 1823, the largest genus of the tribe, is a mixture due to the eclectic placement of numerous taxa from Tropical Africa (Voss 1969) and the Caucasus (Ramamurthy and Ghai 1988).

The tribe Mesostyloidini, a small group of highly specialized desert taxa, comprises six genera and 13 species known from Middle Asia and the Arabian Peninsula. These species are distinguished by the presence of both permanent and deciduous mandibular processes along with dorsal antennal scrobes, free tarsal claws, and the structure of the metatibial corbel. The recent description of *Viridistylus robustus* Colonnelli & Paladini, 2019 introduced the first known winged species in this tribe; however, upon closer examination, *Viridistylus* was found to be misclassified. Additionally, *Parakasakhstania densesquamosa* Magnano, 2009, described from the Arabian Peninsula, was affined with *Kasakhstania romadinae* Arnoldi, 1960 from Kazakhstan and Middle Asia. However, Magnano overlooked the closely related *Brachymerinthus helferi* Faust, 1886 from the Euphrates Valley due to the misclassification of the latter.

This paper presents various taxonomic updates that arose during our ongoing work on the global project, the World Entiminae Database, along with revisions and examinations of type specimens in natural history museums.

Material and methods

Museums and collections. **IZC** – Collection of Ilja Zabaluev, Moscow, Russia; **MNHN** – Muséum National d’Histoire Naturelle, Paris, France; **MSC** – Collection of Maxim E. Smirnov, Ivanovo, Russia; **MTD** – Museum für Tierkunde, Senckenberg Naturhistorische Sammlungen Dresden, Germany; **TMU** – Tarbiat Modares University Collection, Tehran, Iran; **ZIN** – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia; **GAC** – Gabriel Alziar Collection, Cassagnes-Bégonhès, France; **ZMH** – Zoological Museum of Hamburg University, Germany.

Images of beetles in ZMH were done with Keyence digital microscope photosystem. Photos of genitalia were taken using a compound microscope Swift SW350T and a digital camera. Scanning electron microscope photographs were taken with Carl Zeiss SMT EVO 50. The mapping of distribution was conducted using QGIS 3.22.6.

Morphological terms and abbreviations:

Head and mouthparts:

hy	hypostoma;
mn-sc	mandibular scar;
mx	maxilla;
pr	prementum.

Metendosternite:

me-fa	furcal arms;
me-sk	stalk of metendosternite.

Female genitalia:

co	collum;
cr	cornu;
no	nodulus;
ra	ramus;
sty	styli.

Male genitalia:

es	endophallic sclerite;
lov	lateral ostial valves;
ml-app	apical preostial process of median lobe;
Mst8	sternite 8;
Mst9-ca	caput of sternite 9;
oss	ostial sclerite;
sf1–sf3	spiculate fields 1–3.

Results and discussion

Tribe Cyphicerini

Genus *Peronaspis* Suvorov, 1915

Peronaspis Suvorov, 1915: 337, type species by original monotypy *Peronaspis bucharica* Suvorov, 1915.

Taurostomus Marshall, 1944: 86, type species by original designation *Corigetetus claviger* Faust, 1894; Nasreddinov 1974: 665 (as a junior subjective synonym of *Peronaspis* Suvorov, 1915).

Viridistylus Colonnelli & Paladini, 2019: 189, type species *Viridistylus robustus* Colonnelli & Paladini, 2019, syn. nov.

Peronaspis bucharica Suvorov, 1915

Fig. 1A, B

Peronaspis bucharica Suvorov, 1915: 337.

Material examined. UZBEKISTAN • 13 ♀; “Быхапа Кара-Булак” [Uzbekistan, Kara-Bulak, 41°44'43"N, 70°09'22"E, handwritten by G.L. Suvorov]; 14.V.1915; “*Peronaspis bucharica* ♀ typ. m.”; [golden circle]; ZIN • 16 ♀, same data; “L. Arnoldi det.”; ZIN.

Notes. The species was described from an unspecified number of specimens which were considered males. Sixteen additional specimens were apparently found later in the unsorted material and provided with identification labels by L.V. Arnoldi. There are no males in the available material.

The structure of the head was described by G.L. Suvorov incorrectly: he wrote that the pterygia are produced into bidentate processes, with the inner branch curved upward and somewhat laterally, and the outer branch pointed laterally. In fact, the inner margins of

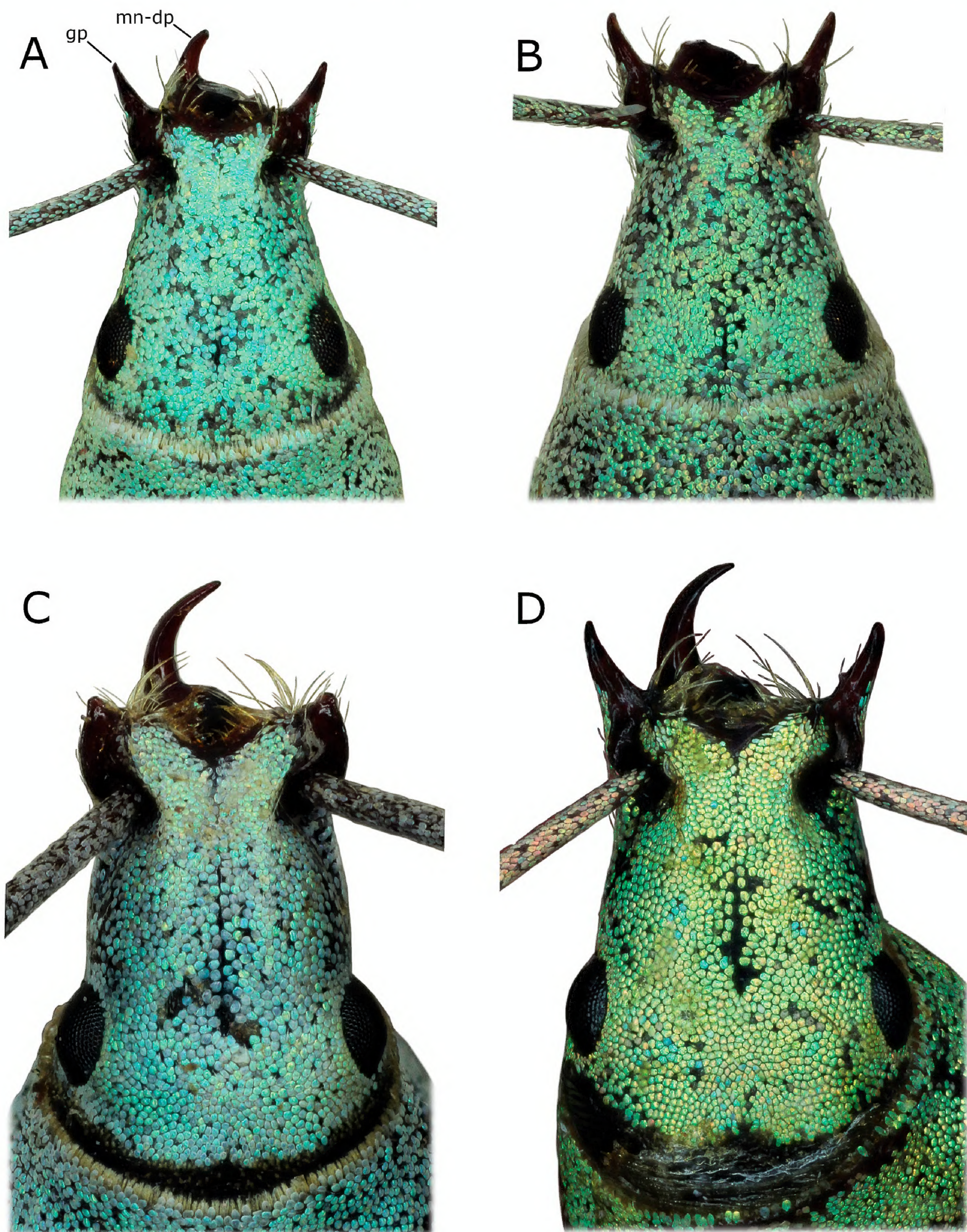


Figure 1. *Peronaspis*, head dorsal view: **A, B.** *Peronaspis bucharica*, females; **C.** *Peronaspis claviger*, male; **D.** *Peronaspis claviger*, female. Photo credit: by Genrik E. Davidian (ZIN), CC-BY 4.0. Abbreviations: gp – genal process; mn-dp – deciduous process of mandible.

the pterygia are situated much higher than the outer margins and are weakly produced anterodorsally while the outer margins are much longer and produced into thrice as long, compressed laterally genal processes (gp). In addition, the left mandible has deciduous process (mn-dp) somewhat longer and noticeably thicker than the genal process, more strongly curved and more medially pointed (Fig. 1A).

Peronaspis claviger (Faust, 1894)

Fig. 1C, D

Corigetetus claviger Faust, 1894: 56.

Taurostomus claviger (Faust, 1894): Marshall 1944: 86.

Peronaspis claviger (Faust, 1894): Nasreddinov 1974: 665.

Viridistylus robustus Colonnelli & Paladini, 2019: 190, syn. nov.

Material examined. TURKMENISTAN • 1 ♂; “Kushka”; “ex coll. G.L. Suvorov”; ZIN • 1 ♂; “Transc. Wuste Kara-Kum”; “*Corigetetus claviger* Rost”; ZIN. TAJIKISTAN • 1 ♀; Aivadzh – Shaartuz; sand desert; 15 May 1961; I.M. Kerzhner leg.; ZIN • 1 ♂; Aivadzh near Shaartuz, 24 Apr. 1959; L. Mikitova leg.; ZIN • 1 ♂; Khozreti-Sho Range: 10 km from Muminabad, 16 Jun. 1966; I.K. Lopatin leg.; ZIN • 1 ♂, 1 ♀; Sarkoron; meadow; 18 Jun. 1958; I.K. Lopatin leg.; ZIN • 1 ♂, 1 ♀ Kabadian, 15 Apr. 1928; Novitskii leg.; ZIN • 1 ♂; Tigrovaya Balka Nature Reserve, Apr. 1966; O.L. Kryzhanovskij leg.; ZIN • 1 ♀; Dzharkurgan, desert, spiny plants, 2 May 1986; Pekin leg.; ZIN • 1 ♂ “Бух.[ара] Тоби-Дора, № 132, Вильберг” [Bukhara, Tobi-Dora, № 132, Vilberg leg.]; ZIN.

Notes. Recently, Colonnelli and Paladini (2019) described the genus *Viridistylus* in the tribe Mesostyloidini. The authors noted that the mandibular process is almost straight and forms an angle of about 30 degrees with the sides of the rostrum, but the authors say nothing about the genal process. After examination of the description and image of the beetle provided in the paper, we hypothesized that it was actually a species of *Peronaspis*. To verify this, we compared the image with two syntypes of *Peronaspis claviger* and other material of this species in the ZIN collection.

Peronaspis claviger is a Middle Asian species of the tribe Cyphicerini, notable for its highly unusual structure of the pterygia bearing a genal process (Faust 1894; Marshall 1944), and females with the left mandible bearing rather long deciduous process, and ventral parts of the pterygia strongly spiniform, projecting anterolaterally.

Marshall (1944) examined *Corigetetus claviger* Faust, with its large genal process, and erected for it the genus *Taurostomus*. Later, Nasreddinov (1974) compared *Taurostomus claviger* with *Peronaspis bucharica* and discovered their close relationship, concluding that *Taurostomus* is a junior synonym of *Peronaspis*.

We suggest that the attribution of *Viridistylus robustus* was based on a misinterpretation of the genal process as the permanent mandibular process (pedicel) characteristic of Mesostyloidini (Thompson 1992). *Viridistylus robustus*

has the genal process and is conspecific with *Peronaspis claviger* (Faust, 1894), sharing all morphological characters with the latter.

Genus *Sepiomus* Aurivillius, 1891, reestablished tribal placement

Fig. 2

Sepiomus Aurivillius, 1891: 211, type species by original designation

Episomus parallelus Chevrolat, 1883 (classified as Cyphicerini);

Marshall 1944: 74 (classified as Leptopiinae); Alonso-Zarazaga and

Lyal 1999: 187 (classified as Tropiphorini = Byrsopagini).

Material examined. *Sepiomus frontalis* Aurivillius, 1891: CAMBODIA • 1 ♂; “Kirirom / (Cambodge)”; M. André leg.; GAC. *Sepiomus parallelus* Chevrolat, 1883: CAMBODIA • 1 ♂; “Kiri Rom / (Cambodge)”; M. André leg.; GAC (Fig. 2A) • 1 ♀; “Kirirom / (Cambodge)”; M. André leg.; GAC. • 1 ♂, 3 ♀; “Indochine”; GAC.

Discussion. *Sepiomus* was established for three Indo-Chinese species: *Episomus parallelus* Chevrolat, 1883 from Cambodia and Vietnam, *Sepiomus frontalis* Aurivillius, 1891 and *S. tuberculatus* Aurivillius, 1891 from Cambodia. Later, Faust (1895a) described a Vietnamese species, *S. aurivilliusi* Faust, 1895, and added to this genus another Vietnamese species *Corigetetus figulus* Faust, 1893 (Faust 1895b), characterized by thin antennal funicle and a widened base of the antennal scape in females. Subsequently, Heller (1925) described *Sepiomus tuberculatus microscutellaris* Heller, 1925 from North Sumatra, and Vayssière (1941) discovered *S. casuarinae* Vayssière, 1941 in Vietnam.

Some Cyphicerini in South-East Asia exhibit specific modifications of the head capsule and body vestiture resembling those of *Episomus* Schoenherr, 1823, such as the Formosan weevil *Episomoides albinus* (Matsumura, 1910) (Kôno 1930).

Sepiomus was originally classified in Cyphicerini. Marshall 1944 while revising the genera of Cyphicerini proposed a new classification based on the chaetotaxy of prementum and mandibles. According to this classification, Cyphicerini genera have 3-setose mandibles, thus genera *Sepiomus* and *Cylindromus* having 4-setose mandibles were transferred to Leptopiinae. Alonso-Zarazaga and Lyal (1999) conventionally retained it in Tropiphorini.

We transfer *Sepiomus* to Cyphicerini based on the deeply emarginate epistome (Fig. 2B), the prementum concealing the maxillae (Fig. 2D, pr), and male genitalia typical for this tribe: median lobe significantly shorter than apodemes and possessing apical preostial process (Fig. 2E, ml-app); endophallus very long, unfolded from median lobe, and bearing large fields of abundant, dense spiculae; sternite 8 consists of heavily sclerotized, broadly lanceolate hemisternites with long setae along the posterior margin (Fig. 2F, Mst8). *Sepiomus* may be placed in the subtribe Cyphicerina based on the presence of post-ocular lobes (Fig. 2C).

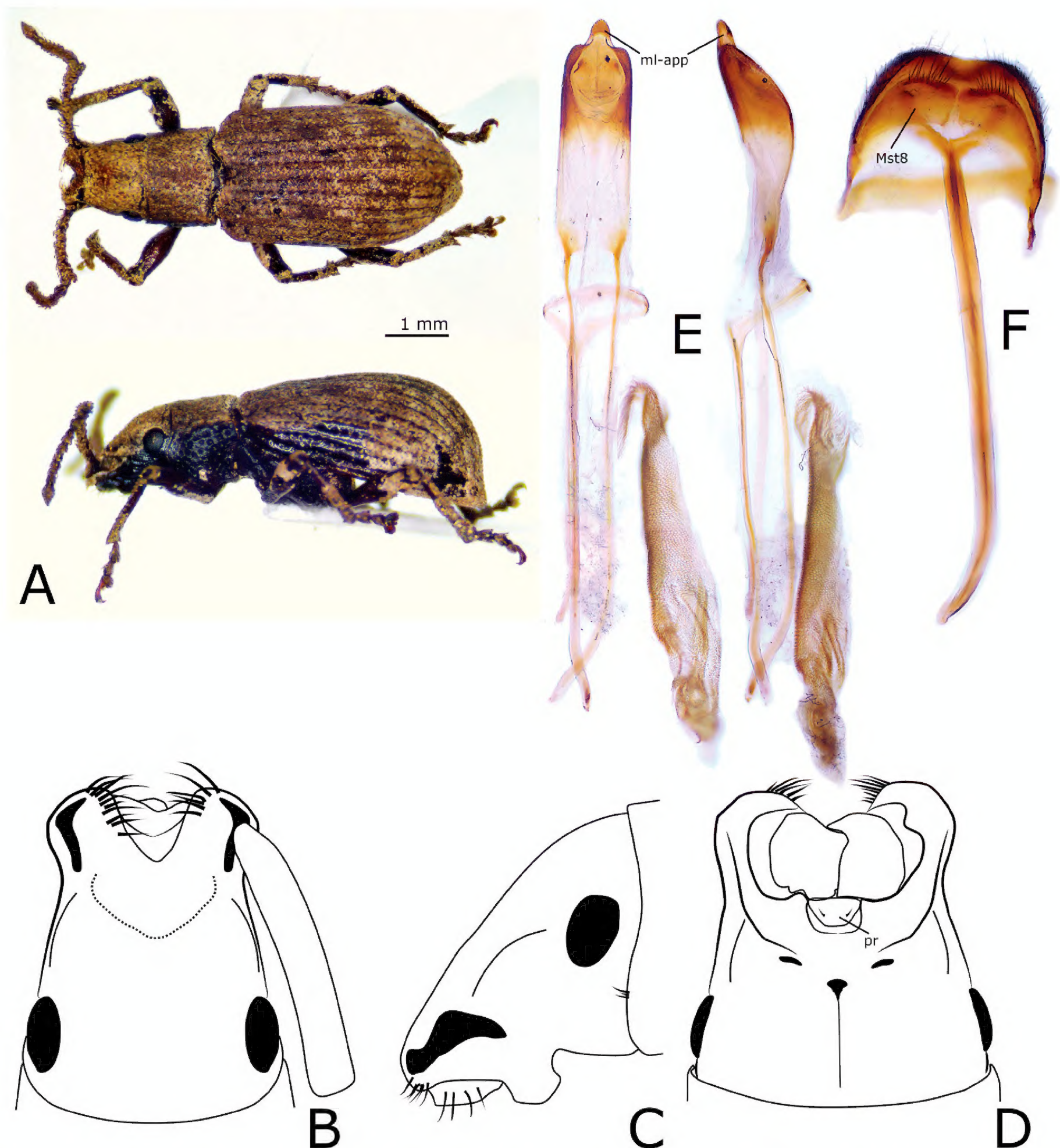


Figure 2. *Sepiomus parallelus*, male: **A.** Body dorsal and lateral view; **B.** Head dorsal view; **C.** Head lateral view; **D.** Head ventral view; **E.** Aedeagus dorsal and lateral view; **F.** Sternite 8 and 9. Abbreviations: ml-app – apical preostial process of median lobe; Mst8 – sternite 8; pr – prementum.

Genus *Cylindromus* Aurivillius, 1891, reestablished tribal placement

Cylindromus Aurivillius, 1891: 213, type species by original monotypy
Cylindromus plumbeus Aurivillius, 1891 (classified as Cyphicerini);
 Marshall 1944: 74 (classified as Leptopiinae); Alonso-Zarazaga and
 Lyal 1999: 187 (classified as Tropiphorini = Byrsopagini).

Notes. This genus, originally described from Cambodia, is related to *Sepiomus* Aurivillius, 1891 and the Formosan *Episomoides* Kôno 1930. We transfer it to Cyphicerini based on a deeply emarginate epistome, which is typical for this tribe.

Genus *Titinia* Pascoe, 1869

Titinia tenuis (Germar, 1848)

Fig. 3

Merimnetes tenuis Germar, 1848: 220.

Myllocerus (*Pseudanosimus*) *bacchus* Voss, 1949: 75, syn. nov.

Type material. AUSTRALIA - **Victoria** • 1 paratype; “Bacchus / Marsh. Vict. XII.” [blueish label, handwritten], “Bacchus / Marsh. Vict. XII.” [handwritten], “Paratypus / Myllocerus / bacchus m.” [red label], “Coll. E. Voss / Eing. 3-75”; ZMH 841041.

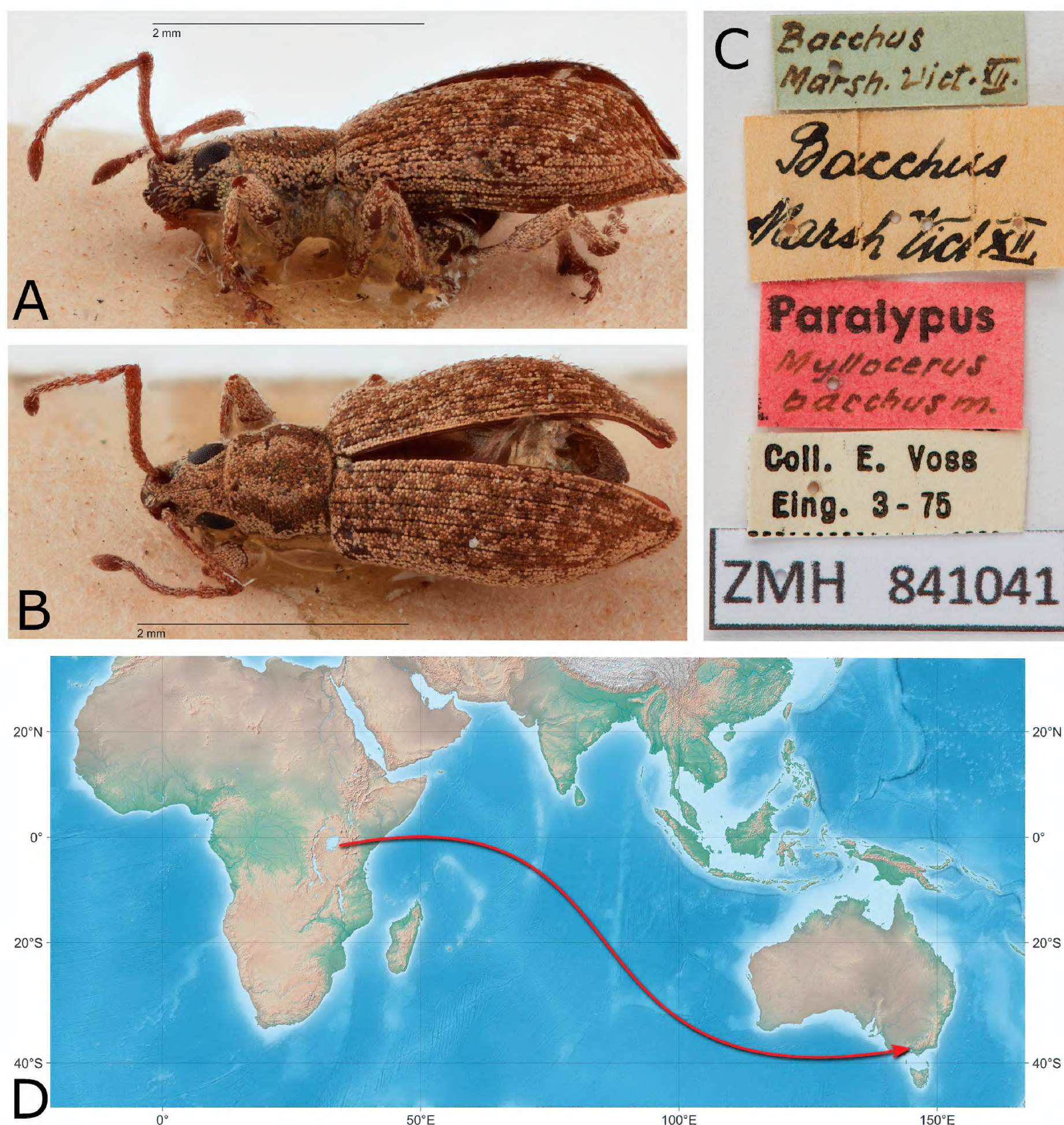


Figure 3. *Myllocerus bacchus* (= *Titinia tenuis*): **A**, **B**. Paratype, body dorsal and lateral view; **C**. Paratype, labels. Photo credit: by Matthias Seidel (ZMH), CC-BY 4.0; **D**. Map showing correction of the type locality from African Lake Victoria to Bacchus Marsh, a peri-urban town near Melbourne (Victoria, Australia).

Notes. While studying African specimens of the genus *Myllocerus* Schoenherr, 1823 from Eduard Voss's collection in the Zoological Museum of Hamburg University, we found *M. bacchus* Voss, 1949, previously described from East Africa. However, upon closer examination of the paratype, we identified it as the South Australian *Titinia tenuis* (Germar, 1848), uncovering a misinterpretation of the label. Eduard Voss had mistakenly assumed that "Bacchus Marsh. Vict." referred to a location near Lake Victoria in Africa, when Bacchus Marsh actually is a peri-urban town near Melbourne, Victoria, Australia. *Titinia tenuis* is distributed in New South Wales, Queensland, South Australia, and Victoria (Oberprieler and Zimmerman 2020).

Tribe Mesostyloidini

Genus *Brachymerinthus* Faust, 1886, new tribal placement

Fig. 4

Brachymerinthus Faust, 1886: 338, type species by original monotypy

Brachymerinthus helferi Faust, 1886 (classified as Eustylini); Alonso-Zarazaga and Lyal 1999: 173 (classified as Phyllobiini).

Parakasakhstania Magnano, 2009: 244, syn. nov.

Composition.

Brachymerinthus helferi Faust, 1886: 339. Fig. 4.

Brachymerinthus densesquamosus (Magnano, 2009: 245), comb. nov.

Notes. A review of old collections in the Museum of Zoology in Dresden has revealed a syntype of *Brachymerinthus helferi* Faust, 1886. This species was described from an uncertain locality along the Euphrates River. *Brachymerinthus* was initially placed in the tribe Eustylini (Faust 1886) probably based on the presence of metatibial corbel and humeral calli of elytra. Faust affined this genus with *Platyomicus* Thomson, 1858 belonging now to Episomini. Later *Brachymerinthus* was provisionally classified as Phyllobiini (Lona 1938; Alonso-Zarazaga and Lyal 1999). Dorsal placement of antennal scrobes converging posteriorly, spatulate apex of protibia, mandibles with permanent process (pedicel; mn-pc) bearing scar (mn-sc) on its

medial surface (Fig. 4C), free tarsal claws, straight anterior margin of pronotum, and presence of metatibial corbel and glossy scaling of body reveal that this taxon belongs to the psammophilous tribe Mesostyloidini, where it is closely related to, or even congeneric with, *Kasakhstania* Arnoldi 1960 from Kazakhstan and Middle Asia. Further morphological study is needed to resolve this taxonomic issue.

Another monotypic genus *Parakasakhstania* Magnano, 2009 was described from the United Arab Emirates without considering the existence of *Brachymerinthus*. A comparison of images given in the original description of *Parakasakhstania densesquamosa* Magnano, 2009, with *Brachymerinthus helferi* suggests that these taxa are at least closely

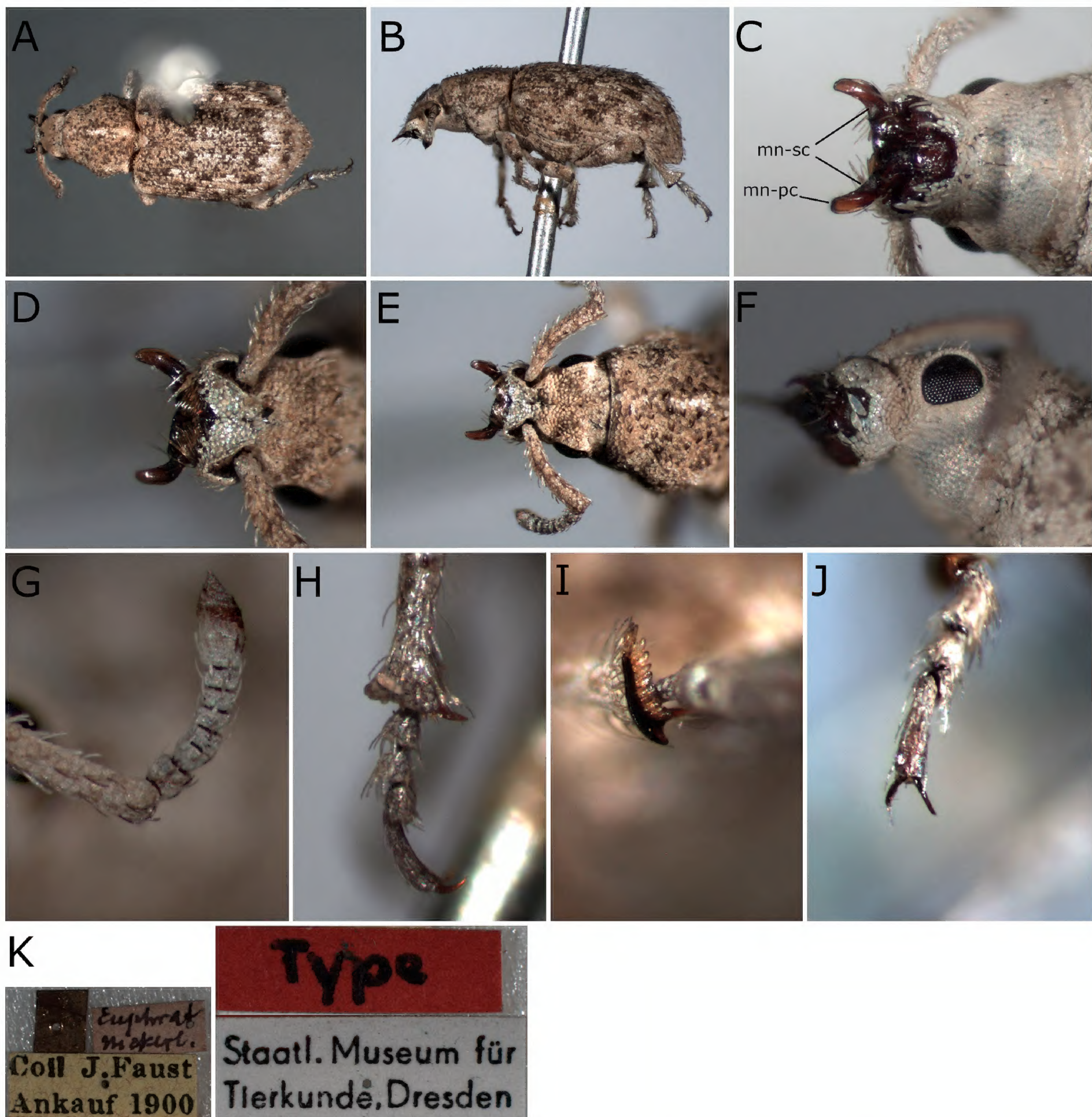


Figure 4. *Brachymerinthus helferi*, syntype: **A, B.** Body dorsal and lateral view; **C.** Head ventral view; **D.** Head apex and mandibles, dorsal view; **E.** Head dorsal view; **F.** Head lateral view; **G.** Antenna; **H.** Distal part of metatibia, lateral view; **I.** Metatibia apex posterior view showing narrow scaleless corbel bevel; **J.** Metatarsus; **K.** Labels. Abbreviations: mn-pc – permanent mandibular process (pedicel); mn-sc – scar.

related species, if not conspecific. Therefore, we establish a new synonymy of *Parakasakhstania* with *Brachymerinthus*, leaving the issue of species status for further study.

Distribution notes. Based on recent investigations of Jan Vilém Helfer's itinerary (Mlíkovský 2012), the type locality of *Brachymerinthus helferi* is potentially situated between Qal'at Najm and Al-Salihyah in Syria. This discovery, along with recent findings in the United Arab Emirates, has enabled a reassessment of the taxonomic composition of Mesostyloidini and broadened the knowledge of its distribution. The distributional pattern of this tribe now links vast desert territories from Arabia to the lower Ural River.

Tribe Phyllobiini

Genus *Phyllobius* Germar, 1823

Phyllobius (Phyllobius) constellatus (Voss, 1959), comb. nov.

Fig. 5

Polydrusus (Tylodrusus) constellatus Voss, 1959: 2.

Type material. 2 ♀ paratypes; IRAN (Recht) / Tahergourabe [=Taher Gourab, Gilan Province] / (feucht) 0 m.u.M. / VI.1950 / F. Schäuffele leg. [blue label, printed]; *Polydrusus / constellatus* m. [handwritten]; Paratypus

[red label, printed]; *Polydrusus / constellatus* m. [handwritten]; ZMH 839374.

Notes. This species was described from Taher Gourab in Gilan Province, Iran. Examination of the paratypes in ZMH revealed completely dorsal placement of the antennal scrobes and sharp lateral margin of the protibiae (Fig. 5E) similar to those in the *Phyllobius pyri* L. species group, which is already known from Iran.

Tribe Polydrusini

Genus *Brachyxystus* Faust, 1897, reestablished tribal placement

Brachyxystus Faust, 1897: 355, type species by original monotypy *Brachyxystus subsignatus* Faust, 1897 (classified as Phyllobiini); Marshall 1916: 279 (classified as Ectemnorhinini Lacordaire, 1863); Thompson 1977: 460 (classified as Polydrusini); Alonso-Zarazaga and Lyal 1999: 173 (classified as Phyllobiini).

Notes. The major characteristic of Polydrusini that differentiates it from Phyllobiini is the lateral position of the antennal scrobes. We agree with the conclusion of Thompson (1977), who conducted a comparative morphological analysis and proved affinity of *Brachyxystus* with *Pachyrhinus* Schoenherr, 1823 and its placement

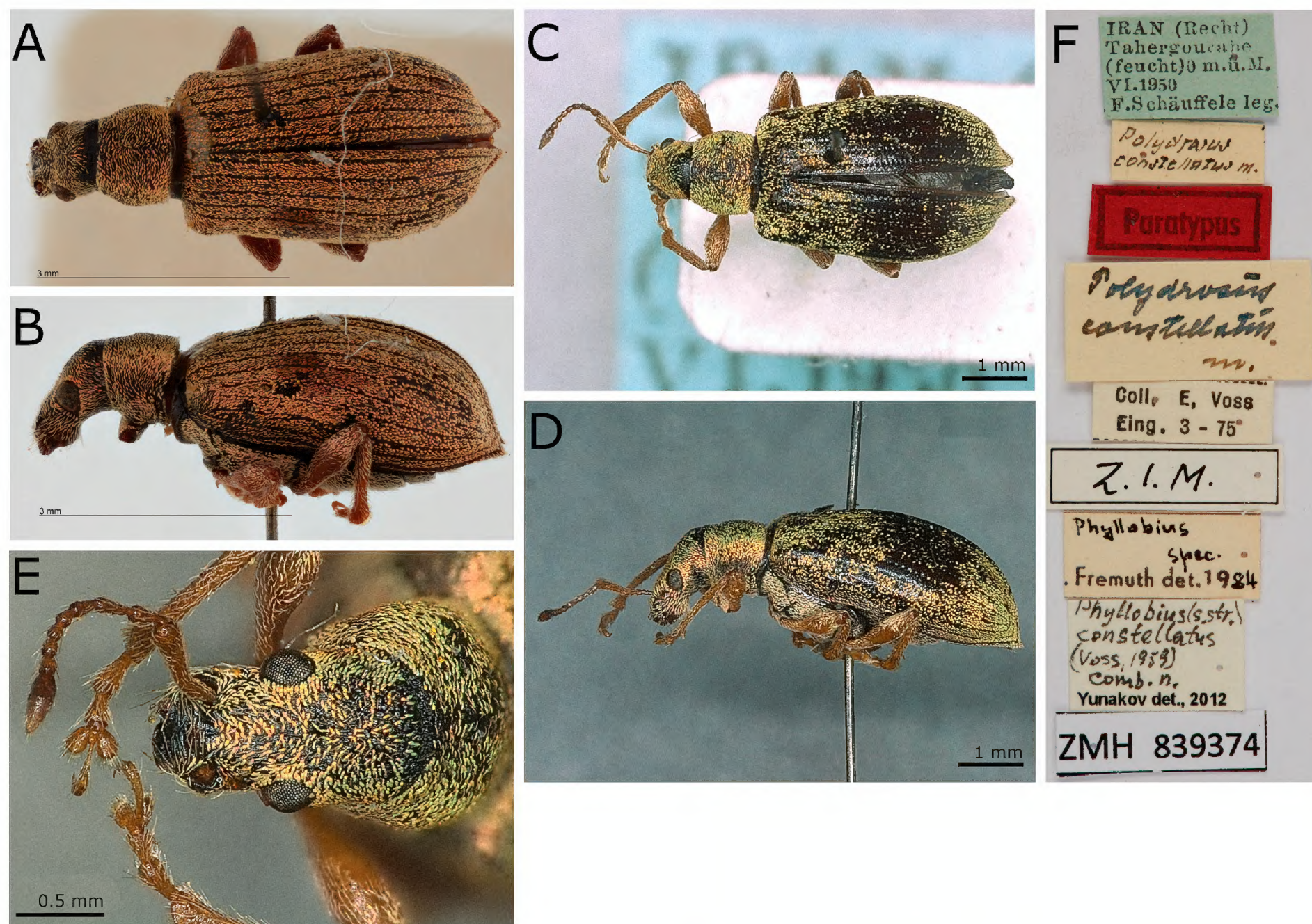


Figure 5. *Phyllobius constellatus* comb. nov.: **A.** *Polydrusus constellatus*, paratype 1, body dorsal and lateral view; **C, D.** *Polydrusus constellatus*, paratype 2, body dorsal and lateral view; **E.** *Polydrusus constellatus*, paratype 2, head dorsal view and forelegs; **F.** Labels. Photo credit: by Matthias Seidel (ZMH), CC-BY 4.0.

in Polydrusini. We disagree with Alonso-Zarazaga and Lyal (1999) who transferred the genus to Phyllobiini without explicit justification. In addition to the morphology of the head, the structure of the aedeagus also supports the affinity of *Brachyxystus* with *Pachyrhinus* within Polydrusini.

***Brachyxystus subsignatus* Faust, 1897**

Fig. 6

Brachyxystus subsignatus Faust, 1897: 356.

Proposed subspecies composition.

Brachyxystus subsignatus subsignatus Faust, 1897: 356.
= *Polydrusus (Chaerodrys) setifrons kashmirensis* Voss, 1959: 82, syn. nov.

Brachyxystus subsignatus gulmargicus Thompson, 1977: 454.

Brachyxystus subsignatus praeivius (Voss, 1959), comb. nov.
Polydrusus (Chaerodrys) setifrons praeivius Voss, 1959: 81

Type material. *Brachyxystus subsignatus*: the lectotype was designated by Thompson (1977) who noted that he had no information about the second specimen mentioned by Faust (1897). We found the second spec-

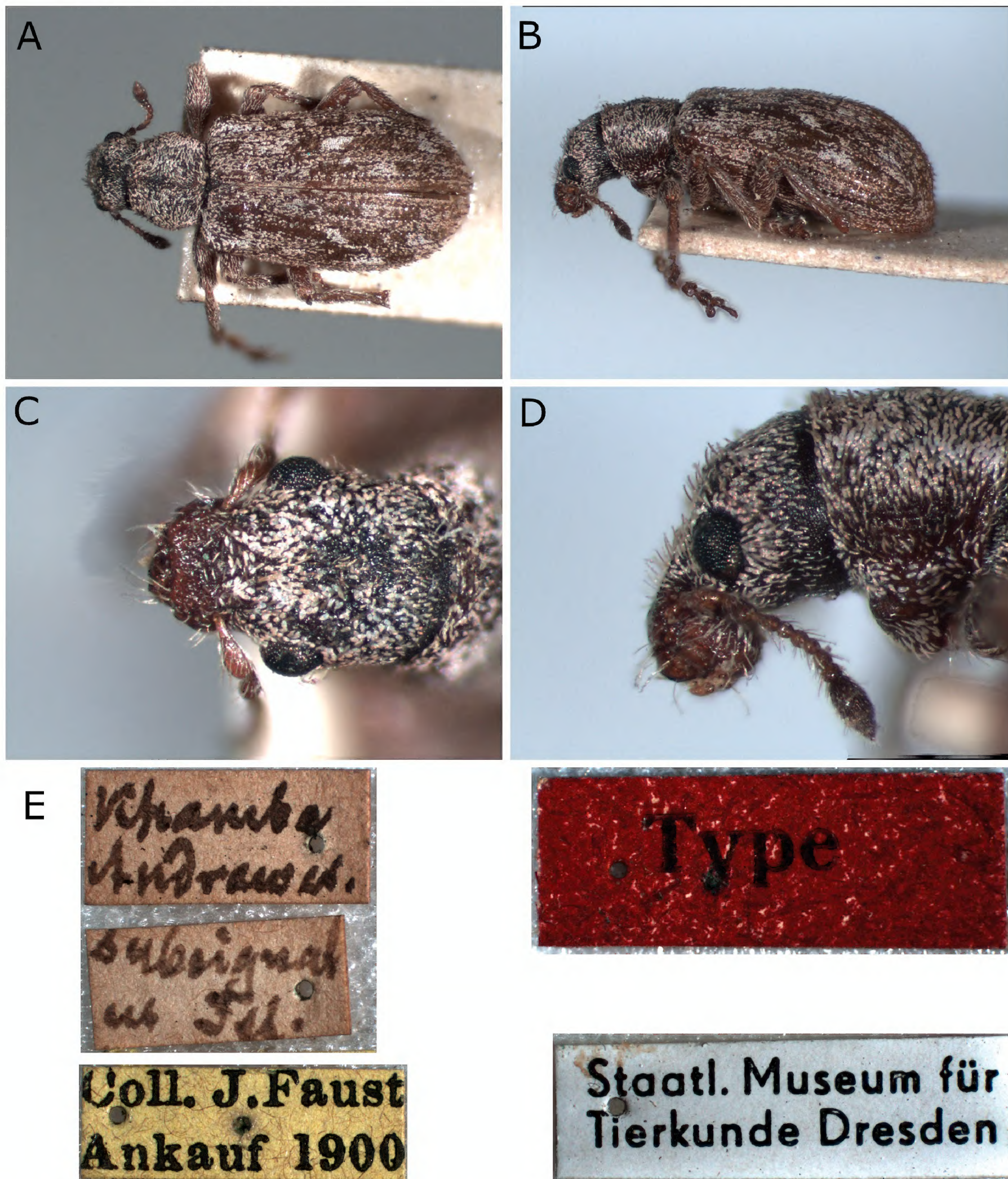


Figure 6. *Brachyxystus subsignatus*, paralectotype (MTD): A, B. Body dorsal and lateral view; C, D. Head dorsal and lateral view; E. Labels.

imen in Johannes Faust's collection and consider it the paralectotype (Fig. 6); INDIA "Khamba [= Chamba] / Andrewes" [handwritten by J. Faust]; "subsignat/us Fst." [handwritten by J. Faust]; "Coll. J. Faust" [yellow, printed]; "Type" [red, printed]; "Staatl. Museum für / Tierkunde Dresden"; MTD.

Polydrusus (*Chaerodrys*) *setifrons kashmirensis*. Holotypus ♀ (Fig. 7); "Kashmir / Rost 1905"; Holotypus / Polydr. setifrons / subsp. / kashmirensis m. [red label]; *Polydrusus* (*Chaerodrys*) *setifrons* / E. Voss det., 1956 / subsp. n. kashmirensis; "Coll. E. Voss / Eing. 3-75"; ZMH 839387.

Discussion. Eduard Voss correctly classified his taxon within the tribe Polydrusini but made an error regarding its genus and species. Upon noticing the similarity of his Kashmiri species with the Iberian *Polydrusus setifrons*, Voss did not consider comparing it with Faust's *Brachyxystus subsignatus*. Consequently, he mistakenly described *Brachyxystus subsignatus* as *Polydrusus setifrons kashmirensis*.

Despite some convergent similarity of general appearance, *Polydrusus setifrons* and *Brachyxystus subsignatus* differ significantly in the structure of the antennae, epistoma, prementum, maxilla, and genitalia of both sexes. *Polydrusus setifrons* is distinguished by the following characters: anterior margin of the epistoma with a fringe of tiny setae; maxilla (mx) not extending beyond hypostoma (hy); prementum (pr) large and broad; mandibular scar large (mn-sc) (Fig. 8G); antennal scape thin and

long, reaching midlength of occiput, as long as funicle and club combined (Fig. 8E); stalk (me-sk) of metendosternite short, furcal arms (me-fa) bifurcate; spermatheca C-shaped, ramus vestigial (Fig. 8D); ovipositor (Fig. 8B, C) with styli (sty); median lobe long, narrow, and tubular, as long as apodemes; endophallus finely armed, without coarse spicules (Fig. 8A); and recumbent round scales have rows of papillae (Fig. 8H) between veins.

On the other hand, *Brachyxystus subsignatus* shows significant structural affinity in the head and genitalia of both sexes with *Pachyrhinus*, as thoroughly examined by Thompson (1977).

These two species also differ in host plant preferences. Unlike *Brachyxystus subsignatus*, which feeds on Himalayan conifers (Stebbing 1911, 1914), *Polydrusus setifrons* is strictly associated with Mediterranean oak forests and mixed pine-oak forests in the Iberian Peninsula. It is a known defoliator of oaks (*Quercus suber* and *Q. ilex*; Fagaceae) throughout southern Spain (Gallardo and Cárdenas 2017).

Genus *Polydrusus* Germar, 1817

Polydrusus (*Polydrusus*) *rufulus* Hochhuth, 1847

Fig. 9

Polydrusus rufulus Hochhuth, 1847: 479; Schilsky 1910: WW; Lodos et al. 2003: 22; Cholokava 2008: 91.

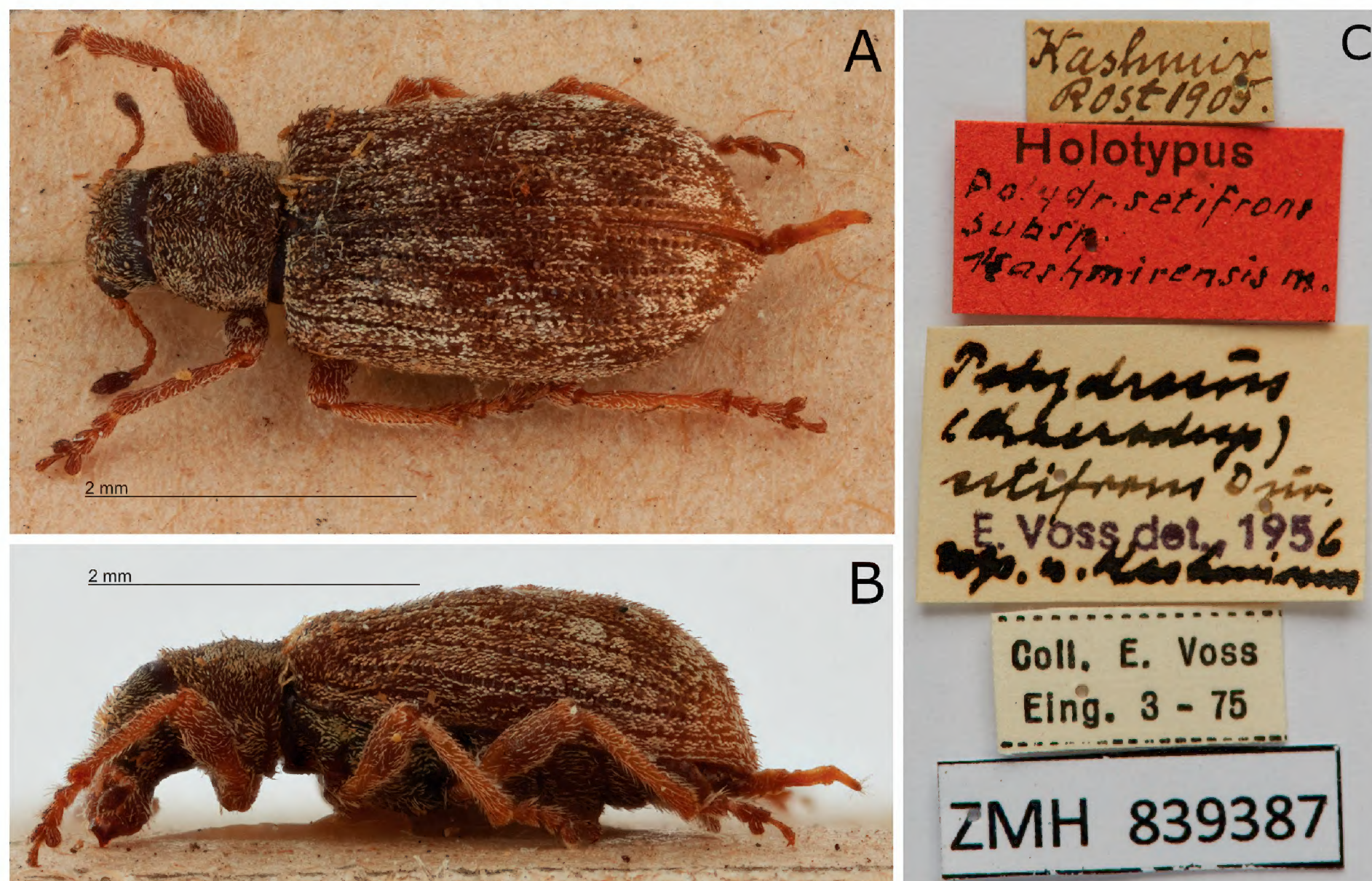


Figure 7. *Polydrusus setifrons kashmirensis* syn. nov. of *Brachyxystus subsignatus subsignatus*, holotype: A, B. Body dorsal and lateral view; C. Labels. Photo credit: by Matthias Seidel (ZMH), CC-BY 4.0.

Polydrusus reitteri Kirsch, 1878 in Schneider & Leder, 1878: 282; Schilsky 1910: WW (as a synonym of *P. rufulus* Hochhuth, 1847); Cholokava 2008: 91 (as a synonym of *P. rufulus* Hochhuth, 1847).

Mylocherus reitteri (Kirsch, 1878): Ramamurthy and Ghai 1988: 396; Yunakov 2013: 278; Alonso-Zarazaga et al. 2017: 272; Alonso-Zarazaga et al. 2023: 278; reestablished combination and synonymy.

Polydrusus (Eudipnus) freyi Zumpt, 1933: 86, syn. nov.

Material examined. AZERBAIJAN • 1 ♀; “Lenkoran”; Leder (Reitter) leg.; ZIN. GEORGIA — **Abkhazia** • 1 specimen; Aguripsta Riv., mouth of Agura-Aresh Riv.; 43°28'19.23"N, 40°44'33.70"E; alt. 1383 m; 1 Jul.

2007; N. Yunakov leg.; deciduous forest; NYC • 4 specimens; Bagri-Yashta Mt. R., Anchkho Pass; 43°28'39.64"N, 40°42'28.49"E; alt. 2000 m; 2 Jul. 2007; N. Yunakov leg.; deciduous forest: *Fagus*, sweeping; NYC • 2 specimens; Bagri-Yashta Mt. R., trail from Avatkhara to Pyv; 43°29'38.94"N, 40°40'26.73"E; alt. 1500 m; 5 Jul. 2007; N. Yunakov leg.; NYC • 1 ♂, 1 ♀; Kodori River Gorge; 7 Jun. 1969; A. Cholokava leg.; ZIN • 2 ♀; Gentsvishi; 7 Aug. 1973; A. Cholokava leg.; ZIN • 2 ♂, 3 ♀; Ochamchira; 7 Aug. 1973; A. Cholokava leg.; ZIN • 1 specimen; 19.5 km N Sukhumi, near Tsumuri; 43°10'34"N, 41°02'55"E; alt. 500 m; 15 Jul. 2008; N. Yunakov leg.; deciduous forest; NYC • 1 ♂;

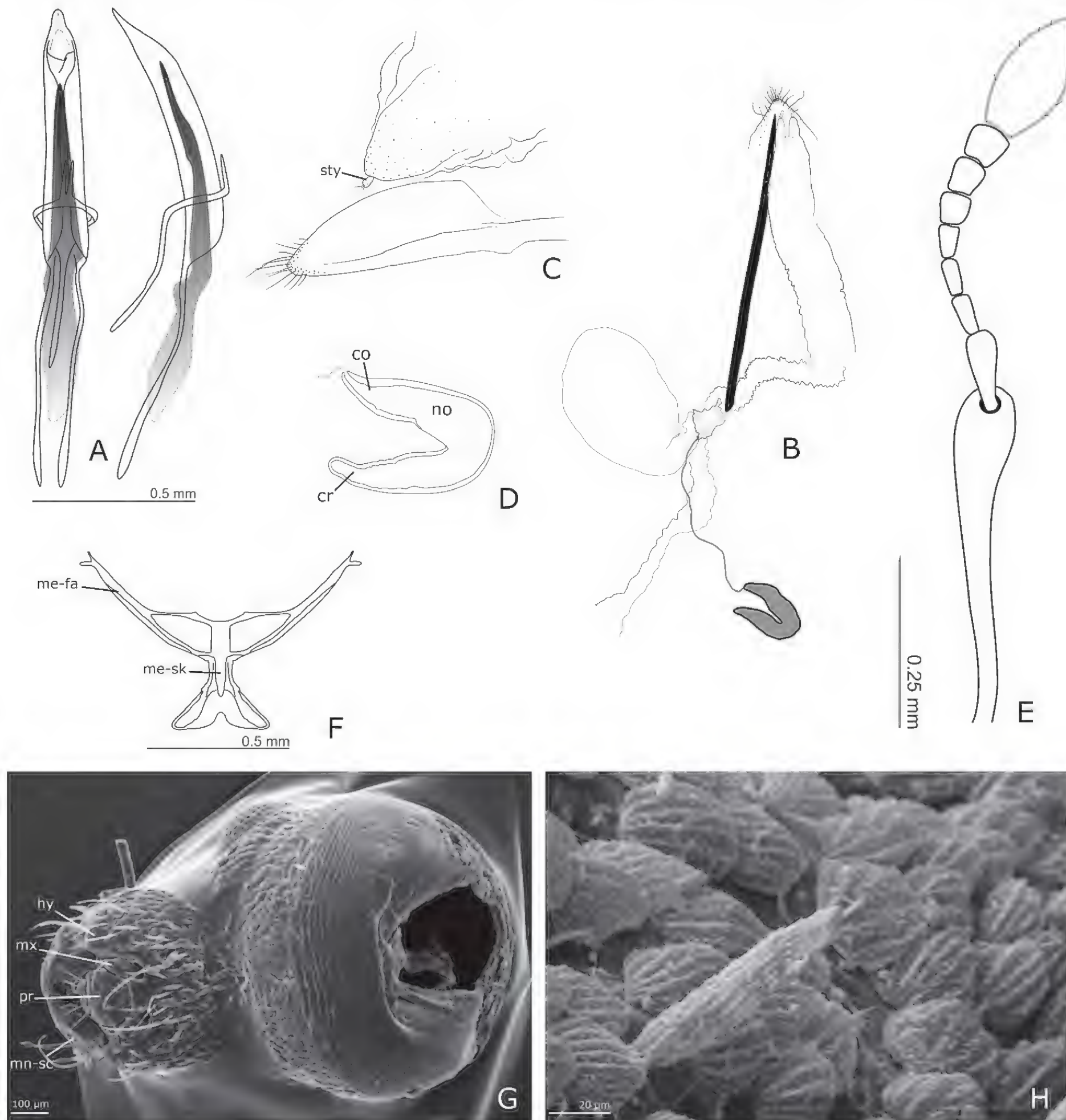


Figure 8. *Polydrusus setifrons*, general morphology: **A.** Aedeagus; **B.** Female genitalia; **C.** Ovipositor and lamina of sternite 8, lateral view; **D.** Spermatheca; **E.** Antenna; **F.** Metendosternite; **G.** Head ventral view; **H.** Scales of body vestiture. Abbreviations: co – collum; cr – cornu; hy – hypostoma; me-fa – furcal arms; me-sk – stalk of metendosternite; mn-sc – mandibular scar; mx – maxilla; no – nodulus; pr – prementum; sty – styli.

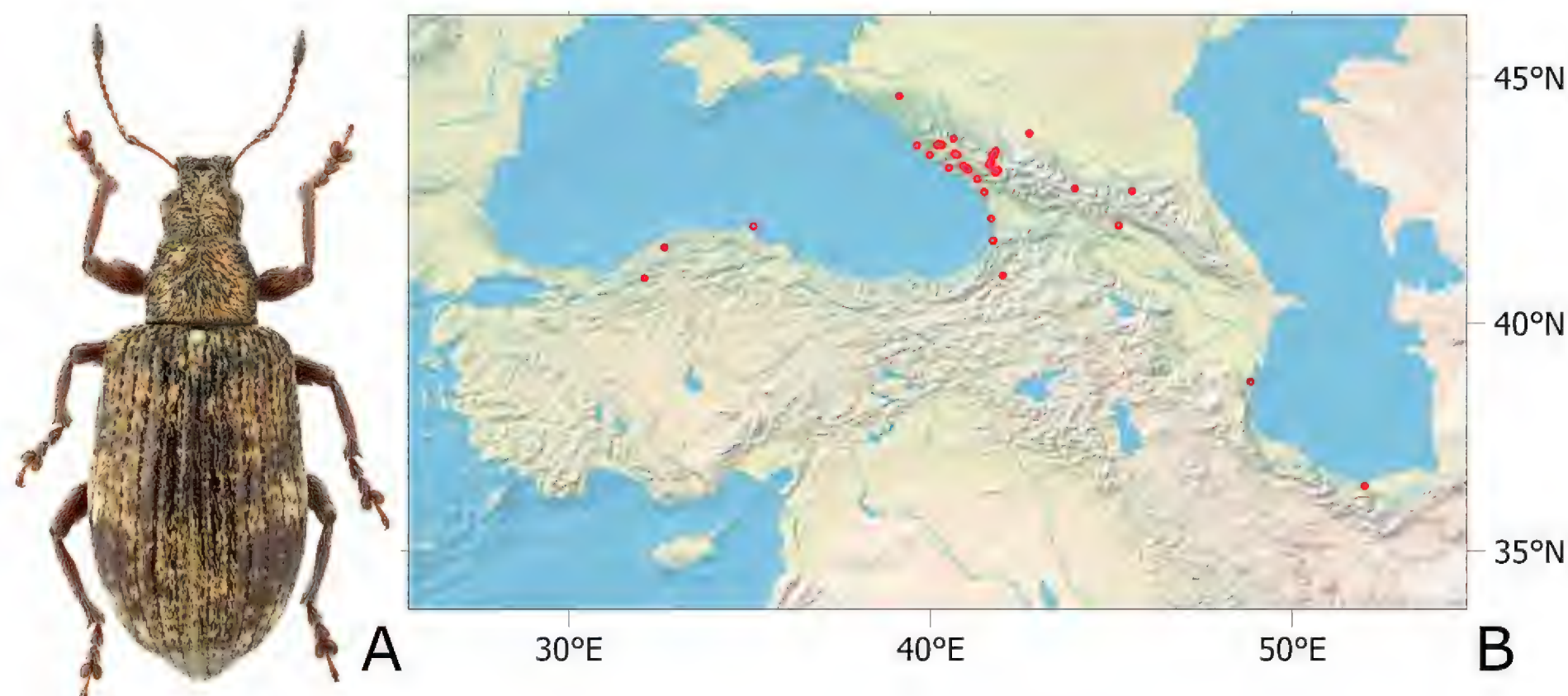


Figure 9. *Polydrusus rufulus*: **A.** Body. Photo credit: by Maxim E. Smirnov, CC-BY 4.0; **B.** Occurrence map.

Western Gumista Riv., mouth of Chedimi Riv.; 43°46.87'N, 41°00'11.40"E; alt. 270 m; 17 Jun. 2007; N. Yunakov leg.; deciduous forest: *Castanea*, *Carpinus*, *Buxus*; NYC • 1 ♀; Klych River Gorge; 18 Jun. 1973; A. Cholokava leg.; ZIN • 1 ♀; Western Gumista Riv., S part of Ashamtvara Range; 43°11'53.39"N, 41°01'21.98"E; alt. 800 m; 18 Jun. 2007; N. Yunakov leg.; deciduous forest; NYC • 1 ♂, 2 ♀; Western Gumista Riv., 1 km upstream of mouth of Gumiripsha Riv.; 43°14'45.80"N, 40°54'40.26"E; alt. 450 m; 20 Jun. 2007; N. Yunakov leg.; deciduous forest; NYC • 1 ♂; Otkhara; 24 Apr. 1955; V.N. Kurnakov leg.; ZIN. — **Ajaria** • 1 ♂, 1 ♀; Chakvi; 10 Apr. 1911; K.E. Demokidov leg.; ZIN • 1 ♀; Karapeti env.; alt. 2136 m; 10 Jul. 2013; S. Svetlov leg.; MSC • 2 ♀; Chakvi; 11 May 1913; K.E. Demokidov leg.; ZIN. — **Kakheti** • 1 ♀; Akhmeta; 9 Jul. 1961; A. Cholokava leg.; ZIN. — **Samegrelo-Zemo Svaneti** • 1 ♀; Poti; 24 May 1909; ZIN. **IRAN** — Mazandaran • 1 ♀; Noor; 9 Apr. 2024; Zahra Azizi leg; TMU. **RUSSIA** — **Chechnya** • 1 ♀; Itum-Kale, Assa River Valley; alt. 1200 m; 10–20 Jun. 1987; G.M. Abdurakhmanov leg.; ZIN. — **Karachay-Cherkessia** • 1 ♀; Teberda Nature Reserve, resort, Teberda River Valley; alt. 1300 m; 15 May 1965; K.B. Gorodkov leg.; ZIN • 1 ♂; Тебердинский аул [Teberdinsky Aul, 43.549°N, 41.802°E]; 19 Aug. 1897; Шукин [Shchukin leg.]; ZIN • 1 ♀; 10 km S of Teberda Health Resort; 21 Jun. 1976; D.R. Kasparian leg.; ZIN • 1 ♀; “Ca.[ucasus] b.[orealis] Teberda; Jun. [1]912; Roubal leg.”; ZIN • 1 ♂; Teberda; Aug. 1935; ZIN • 1 ♀ “Cauc.[asus] sept.[entrionalis] Teberda, Lake Mukhu; alt. 4000 ft; A. Zolotarew leg.; ZIN • 1 ♀; “Cauc.[asus] sent.[o] bor.[ealis], Teberda, Mukhu”; A. Zolotarew leg.; ZIN. — **Krasnodar Territory** • 2 ♀; Goryachy Klyuch, 27 May 1971, B.A. Korotyaev leg.; ZIN • 1 ♀; Goryachy Klyuch; 23 Apr. 1976; B.A. Korotyaev leg.; ZIN • 1 specimen; Krasnaya Polyana forestry, Mzymta River valley; 24 Jun. 1951; Berezovsky leg.; KUMN • 1 specimen; Krasnaya Polyana forestry, Mzymta River Valley; 26 Jun. 1951; Berezovsky leg.; KUMN • 1 ♂; Adler; Aug. [1912]; Lgocki leg.; ZIN • 2 ♀; “С. Кавказ, Умпырь” [= North Caucasus,

Umpyrskiy, 43.8°N, 41°E]; Aug. 1899; ZIN — **North Ossetia** • 1 specimen; Tsei Gorge; alt. 1780 m; 10 Jul. 2013; Yu.E. Komarov leg.; IZC. — **Stavropol Territory** • 1 ♀; Kislovodsk; alt. 1250 m; 17 May 2009; D.R. Kasparian leg.; forest with *Betula* and *Salix*; ZIN. **TURKEY** — **Bartın** • 1 specimen; Ulus; 29 May 1980; N. Lodos leg.; Rosa; DEEU — **Bolu** • 3 specimens; Mengen; 26 May 1980; N. Lodos leg.; *Alnus*; DEEU — **Sinop** • 1 specimen; Sinop; 06 Jun. 1980; N. Lodos leg.; *Fagus*; DEEU.

Historical specimens with uncertain geography.

1 ♂; “Caucas[us] [orange printed label]”, “*Polydrosus rufulus* Hochh., Faust” [handwritten; ex coll. P.P. Semenov-Tian-Shansky]; ZIN • 1 ♀; “Caucas[us]” [handwritten]; ZIN • 1 ♂, 6 ♀; [green square], coll. Christoph; ZIN.

Polydrusus reitteri Kirsch, 1878

Notes. All attempts to trace type specimens of *Polydrusus reitteri* in MTD among Kirsch’s material were unsuccessful. The species was described from Mikwena at Rioni River, Georgia and compared with *Polydrusus sparsus* Gyllenhal, 1834, a species unknown from the Caucasus. *Polydrusus reitteri* has been mistakenly placed in the genus *Myloccerus* Schoenherr, 1823 by Ramamurthy and Ghai (1988), as no *Myloccerus* species is known from Georgia (Cholokava 2008). Instead, there is *Polydrusus rufulus* Hochhuth 1847, which has some rostrum features resembling those of *Myloccerus*. According to the original description, *P. reitteri* may well be a synonym of *P. rufulus* Hochhuth, 1847.

Polydrusus (Eudipnus) freyi Zumpt, 1933

Notes. The male holotype and female paratype from the collection of Museum G. Frey have been examined in the Zoologische Staatssammlung München by Boris A. Korotyaev, both undoubtedly belong to *P. rufulus*.

Distribution notes. This species is ranged through the Caucasus, northern part of Asia Minor to Alborz Mountains in Iran (Fig. 9B), where it inhabits floodland and mountain forests along large rivers. Russia: Krasnodar Territory (Schilsky 1910), Adygea (Korotyaev and Arzanov 2010), Chechnya, Dagestan, Ingushetia, Kabardino-Balkaria, North Ossetia (Ismailova 2007). Georgia (Schilsky 1910, Cholokava 2008), Azerbaijan: Lankaran (Schilsky 1910), the Asian part of Turkey (Lodos 1977; Lodos et al. 2003). Schilsky (1910) recorded *P. rufulus* from Adrianople (= Edirne) based on specimens collected by Max Korb but the further comprehensive weevil surveys in Turkey (Lodos 1977; Lodos et al. 2003) did not confirm this. On the other hand, N. Lodos recorded *P. sparsus* in western Turkey and the latter is also known from Greece. Thus, Schilsky's record from Edirne is most likely based on the misidentification of *P. sparsus*. In Turkey (provinces of Bartın and Bolu) *P. rufulus* is probably sympatric with the closely related *P. sparsus* (Lodos et al. 2003). In 2024 *P. rufulus* was collected in Hyrcanian forests, Mazandaran Province of Iran (first country record); photographs of one specimen were received from Zahra Azizi (Environmental Science Department, Tarbiat Modares University, Noor, Iran) and examined by the first author.

***Polydrusus (Polydrusus) viridimaculatus* Pic, 1919, stat. nov.**

Fig. 10

Polydrusus picus var. *viridimaculatus* Pic, 1919: 2.

Polydrusus picus viridimaculatus Pic, 1919: Yunakov 2013: 374; Alonso-Zarazaga et al. 2017: 362; Alonso-Zarazaga et al. 2023: 376.

Polydrusus (Eustolus) scapularis Pesarini, 1975: 52, syn. nov.

Type material. TURKEY • Lectotype ♀, herein designated; “Asie min. / Brousse / Pic 1899 [printed label]; viridimaculatus / Pic [handwritten]; Museum Paris [printed]; Lectotype *Polydrusus picus* var. *viridimaculatus* Pic / Yunakov des., 2012; MNHN • Paralectotype ♀, dissected; Brousse [handwritten]; Pol. *picus* var. (ex. Desbr.) [handwritten]; “Paralectotype *Polydrusus picus* var. *viridimaculatus* Pic / Yunakov des., 2012”; MNHN (Fig. 10A–D).

Other material examined. TURKEY • 1 ♀; “Turkey, Murat Dagi Mt., SE Gediz” [39.0333°N, 29.4167°E]; 7 Jun. 2006; P. Białooki leg.; ZIN • 3 ♂, 3 ♀; “Amasia”; “Samml. K.F. Hartmann / Ankauf 1941.I.”; MTD. (Fig. 10E, F).

Notes. This taxon was briefly described as a variety of *Polydrusus picus* (Fabricius, 1792) from Turkey. It exhibits significant differences in external morphology, particularly in the structure of the male and female genitalia (Fig. 10E–H):

The median lobe apex is attenuate (evenly narrowed anteriorly in *P. picus*).

The lateral ostial valves (lov) are less sclerotized, with unclear margins (sclerotized, with distinct margins in *P. picus*).

The endophallic armature bears fields of enlarged and sparser spicules (sf1), and smaller and denser spicules (sf2) (armature consists of fields with only smaller and denser spicules in *P. picus*).

The endophallic sclerite (es) is small and lacks an additional spiculate field (sf3) (endophallic sclerite is larger with an additional spiculate field in *P. picus*).

The apodeme of male sternite 9 has a small caput (Mst9-ca) (large caput in *P. picus*).

The nodulus of the spermatheca (no) is not inflated and the cornu (cr) is attenuate (nodulus inflated and cornu rounded and shortened in *P. picus*).

These differences strongly support the promotion of *Polydrusus viridimaculatus* to the species level.

***Polydrusus (Eustolus) scapularis* Pesarini, 1975**

Notes. Pesarini (1975) overlooked *P. viridimaculatus* Pic, 1919 while describing *P. scapularis*, and compared his new species with *Polydrusus (Poecilodrusus) elegans* Reitter, 1887, *P. (Poecilodrusus) viridicinctus* Gyllenhal, 1834, and *P. (Eurodrusus) cervinus* (Linnaeus, 1758), placing it in the *P. cervinus* species-group. The paratype of *Polydrusus scapularis* in the ZIN collection was examined. External morphology and the structure of aedeagus and spermatheca of *Polydrusus scapularis* give evidence that it is a junior synonym of *P. viridimaculatus*.

Conclusion

Our morphological study of the examined taxa has resulted in the following taxonomic changes.

- The Indochinese Byrsopagini genera *Cylindromus* and *Sepiomus* should be transferred back to Cyphicerini.
- *Mylocerus bacchus*, previously considered an Afrotropical species, is now identified as the South Australian *Titinia tenuis*.
- *Viridistylus* is congeneric with *Peronaspis* (Cyphicerini) and does not belong to Mesostyloidini.
- *Brachymerinthus*, previously deemed a Phyllobiini genus from the Middle East, is closely related to the Transcaspian genus *Kasakhstania* and should be transferred to Mesostyloidini.
- The Phyllobiini genus *Brachyxystus* should be transferred to Polydrusini.
- The two subspecies of *Polydrusus setifrons* from Afghanistan and Kashmir, described by Voss (1959), actually belong to *Brachyxystus* and do not exhibit morphological affinities with the Iberian *Polydrusus setifrons*.

- The head morphology of *Polydrusus constellatus* confirms that this species belongs to the genus *Phyllobius*, where it is closely related to the *Phyllobius pyri* species group.
- While cataloguing the genus *Mylocherus*, Ramamurthy and Ghai (1988) unjustifiably transferred *Polydrusus reitteri* Kirsch, 1878 to *Mylocherus* due to a misinterpretation of the original description. This

mistake was repeatedly reproduced in subsequent catalogues of Palaearctic Coleoptera. In fact, *Polydrusus reitteri* is a junior synonym of *Polydrusus rufulus* Hochhuth, 1847, confirming that the genus *Mylocherus* is not present in the Western Caucasus.

- *Polydrusus viridimaculatus* is a distinct species, restricted to Asia Minor, and not a subspecies of the European *P. picus*.

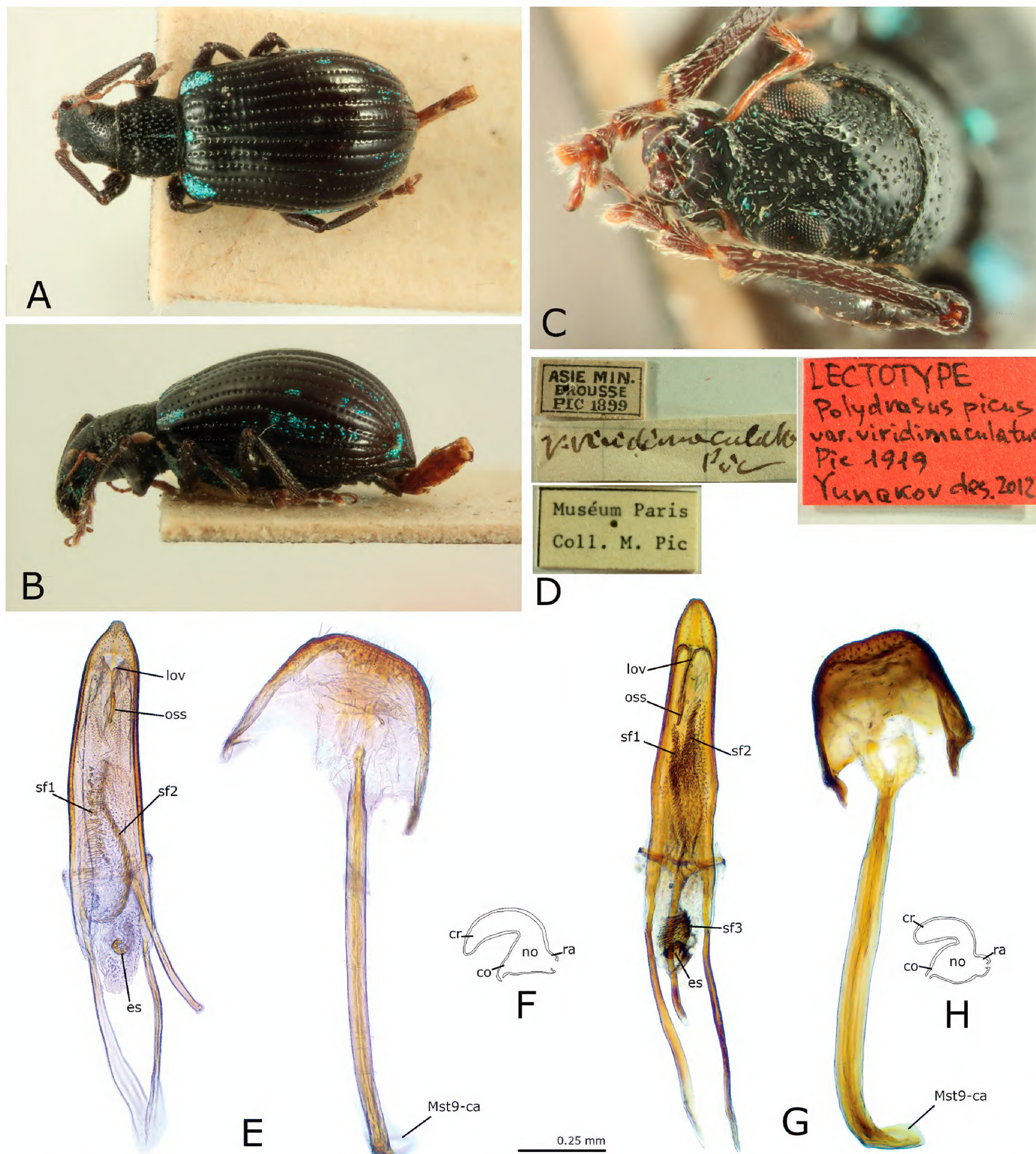


Figure 10. *Polydrusus*: **A, B.** *Polydrusus viridimaculatus* stat. nov., lectotype (MNHN), body dorsal and lateral view; **C.** *Polydrusus viridimaculatus* stat. nov., lectotype, head dorsal view; **E.** *Polydrusus viridimaculatus* stat. nov., male genitalia; **F.** *Polydrusus viridimaculatus* stat. nov., spermatheca; **G.** *Polydrusus picus*, male genitalia; **H.** *Polydrusus picus*, spermatheca. Abbreviations: Male genitalia: es – endophallic sclerite; lov – lateral ostial valves; Mst9-ca – caput of sternite 9; oss – ostial sclerite; sf1–sf3 – spiculate fields 1–3; Spermatheca: co – collum; cr – cornu; no – nodulus; ra – ramus.

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